

Amendment Under 37 C.F.R 1.116
Serial No. 10/621,589

IN THE CLAIMS

Please amend the claims as follows:

1. (Canceled)

2. (Currently Amended) An optical source generator for wavelength-division-multiplexing optical communication systems, comprising:

a pumping-light generation section configured to generate and output pumping lights;
a wavelength-division multiplexer/demultiplexer being provided with one multiplexing port and a plurality of demultiplexing ports, being configured to wavelength-division-multiplex and to output optical signals inputted into the multiplexing port, and being configured to wavelength-division-demultiplex and to output optical signals inputted into the demultiplexing ports;

an optical path converter being configured to output the pumping lights generated and received from the pumping-light generation section to the multiplexing port of the wavelength-division multiplexer/demultiplexer by converting a path of the pumping lights and being configured to output optical signals outputted from the multiplexing port of the wavelength-division multiplexer/demultiplexer through converted paths for the optical signals;

a plurality of wavelength-dependent reflectors, each being connected to one of the respective demultiplexing ports of the wavelength-division multiplexer/demultiplexer and each being configured to reflect only optical signals that have a particular wavelength that corresponds to one of the respective said demultiplexing ports;

a plurality of optical fiber amplifiers, each having two sides, one side of which being connected to one of the associated wavelength-dependent reflectors and each amplifier being

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configured to generate spontaneously emitted lights in response to pumping lights generated from the pumping-light generation section; and,

a plurality of wavelength-independent reflectors, each being connected to the other side of one of the respective optical fiber amplifiers~~The optical source generator according to claim 1,~~

wherein reflectance of each wavelength-dependent reflector and reflectance of each wavelength-independent reflector are controlled independently, thereby enabling optical sources to be transmitted through the respective reflectors unilaterally or bilaterally.

3. (Currently Amended) The optical source generator according to claim 1, wherein the wavelength-dependent reflectors comprise fiber-Bragg gratings which are each connected respectively to the demultiplexing ports of the wavelength-division multiplexer/demultiplexer.

4. (Currently Amended) The optical source generator according to claim 1, wherein the wavelength-dependent reflectors comprise thin film-filter reflectors which are each connected respectively to the demultiplexing ports of the wavelength-division multiplexer/demultiplexer and have respective thin film filters.

5. (Currently Amended) The optical source generator according to claim 1, wherein the optical path converter includes an optical circulator comprising:

a first port configured to input pumping lights generated from the pumping-light generation section;

a second port connected to the multiplexing port of the wavelength-division multiplexer/demultiplexer; and,

a third port configured to output the wavelength-division-multiplexed optical signals.

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6. (Currently Amended) The optical source generator according to claim +2, further comprising a plurality of modulators configured to use wavelength-division-multiplexed lights passing through the wavelength-independent reflectors as individual optical sources.

7. (Previously Presented) An optical source generator for wavelength-division-multiplexing optical communication systems, comprising:

a wavelength-division multiplexer/demultiplexer being provided with one multiplexing port and a plurality of demultiplexing ports, being configured to wavelength-division-multiplexing and output optical signals inputted into the multiplexing port, and being configured to wavelength-division-demultiplex and to output optical signals inputted into the demultiplexing ports;

a pumping-light generation section configured to generate and output pumping lights;

an optical path converter having a first port being configured to input pumping lights generated from the pumping-light generation section, a second port being connected to the multiplexing port of the wavelength-division multiplexer/demultiplexer, and a third port being configured to output the wavelength-division-multiplexed optical signals;

a plurality of optical fiber amplifiers being configured to generate spontaneously emitted lights in response to pumping lights generated from the pumping-light generation section;

a first plurality of wavelength-independent reflectors, each connected to the one side of one of the respective optical fiber amplifiers;

an optical band pass filter having two sides, one side being connected to the third port of the optical path converter, the optical band pass filter being configured to pass only the optical source bands; and,

a wavelength-independent reflector, other than the first plurality of wavelength-

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independent reflectors, being connected to the other side of the optical band pass filter,

wherein the optical band pass filter is interposed between the first plurality of wavelength-independent reflectors and the wavelength-independent reflector other than the first plurality of wavelength-independent reflectors.

8. (Previously Presented) The optical source generator according to claim 7, wherein reflectance of each wavelength-independent reflectors is controlled independently, thereby enabling the optical sources to be transmitted through the respective reflectors unilaterally or bilaterally.

9. (Currently Amended) The optical source generator according to claim 42, wherein the optical source generator is configured to output light bidirectionally.

10. (Currently Amended) The optical source generator according to claim 42, wherein each of the wavelength-dependent reflectors is configured to transmit a portion of the optical signals incident upon its surface.

11. (Currently Amended) The optical source generator according to claim 42, wherein each of the wavelength-independent reflectors is configured to transmit a portion of the optical signals incident upon its surface.

12. (Previously Presented) The optical source generator according to claim 7, wherein the optical source generator is configured to output light bidirectionally.

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13. (Previously Presented) The optical source generator according to claim 7, wherein each of the first plurality of wavelength-independent reflectors is configured to transmit a portion of the optical signals incident upon its surface.

14. (Previously Presented) The optical source generator according to claim 7, wherein the wavelength-independent reflector other than the first plurality of wavelength-independent reflectors is configured to transmit a portion of the optical signals incident upon its surface.